

Project Firstline

Project Firstline gives frontline staff the infection control and prevention tools and information they need to protect themselves, their facility, their family and their community from infectious diseases.

Encourage your staff to join today

hanys.org/project_firstline



CDC's Project Firstline infection control and prevention program is being made available to healthcare workers by HANYS, in collaboration with Health Research, Inc. and the Department of Health.

Introduction to Reservoirs: Where Germs Live

Session 1

Body Reservoirs



Polling Question

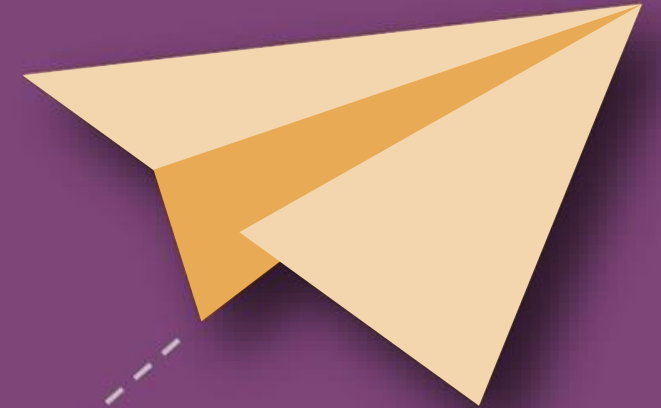
Who is in the room with us today?

1. Infection Control
2. Quality Professional
3. EVS Staff
4. Security
5. Nurses aid, technician
6. Pharmacy
7. Administration
8. Volunteer
9. Other-nursing, physician

Welcome

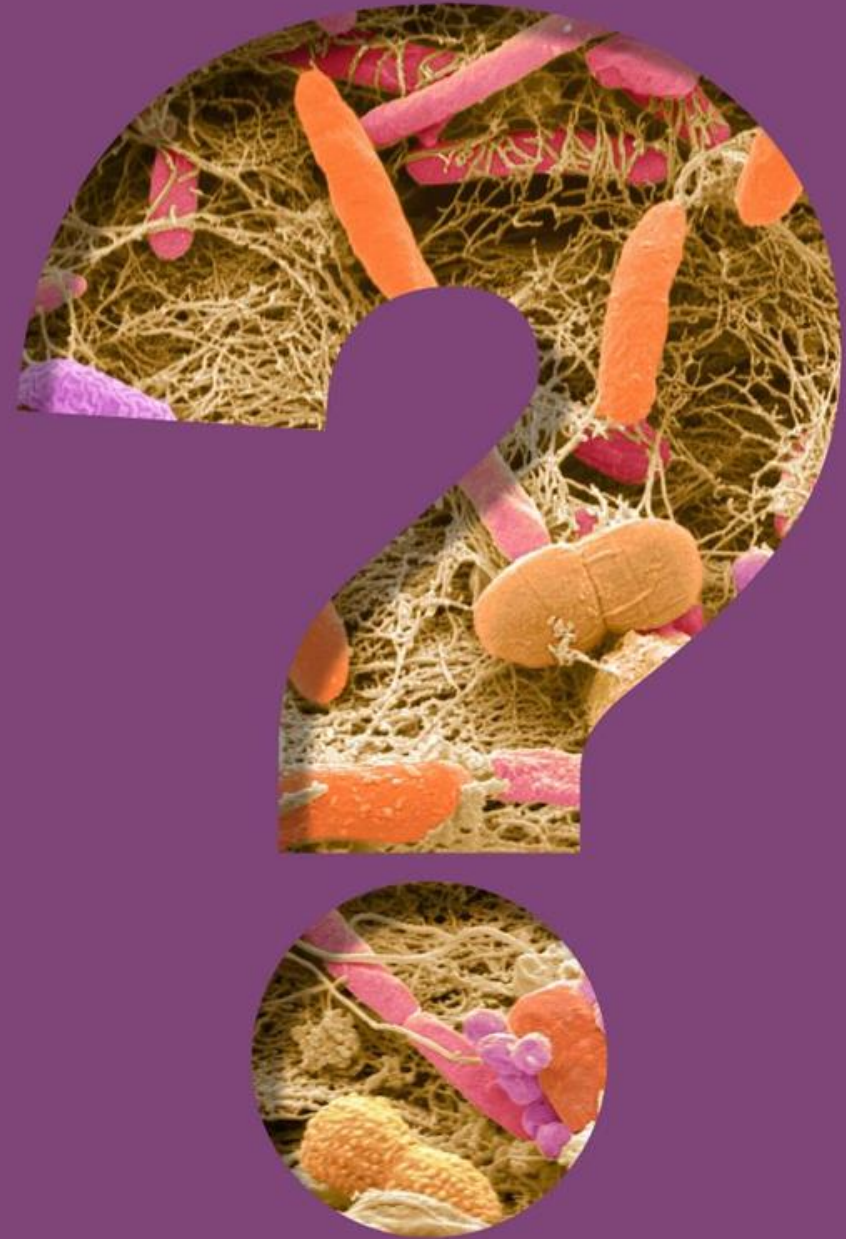
Agenda

- Welcome and Introductions
- Four Body Reservoirs
- Word Clouds and Discussion
- Bringing It Together
- Conclusion



Four Body Reservoirs

What Do You Think?



The Body Reservoirs

Skin



Gastrointestinal system (the “gut”)



Respiratory system



Blood

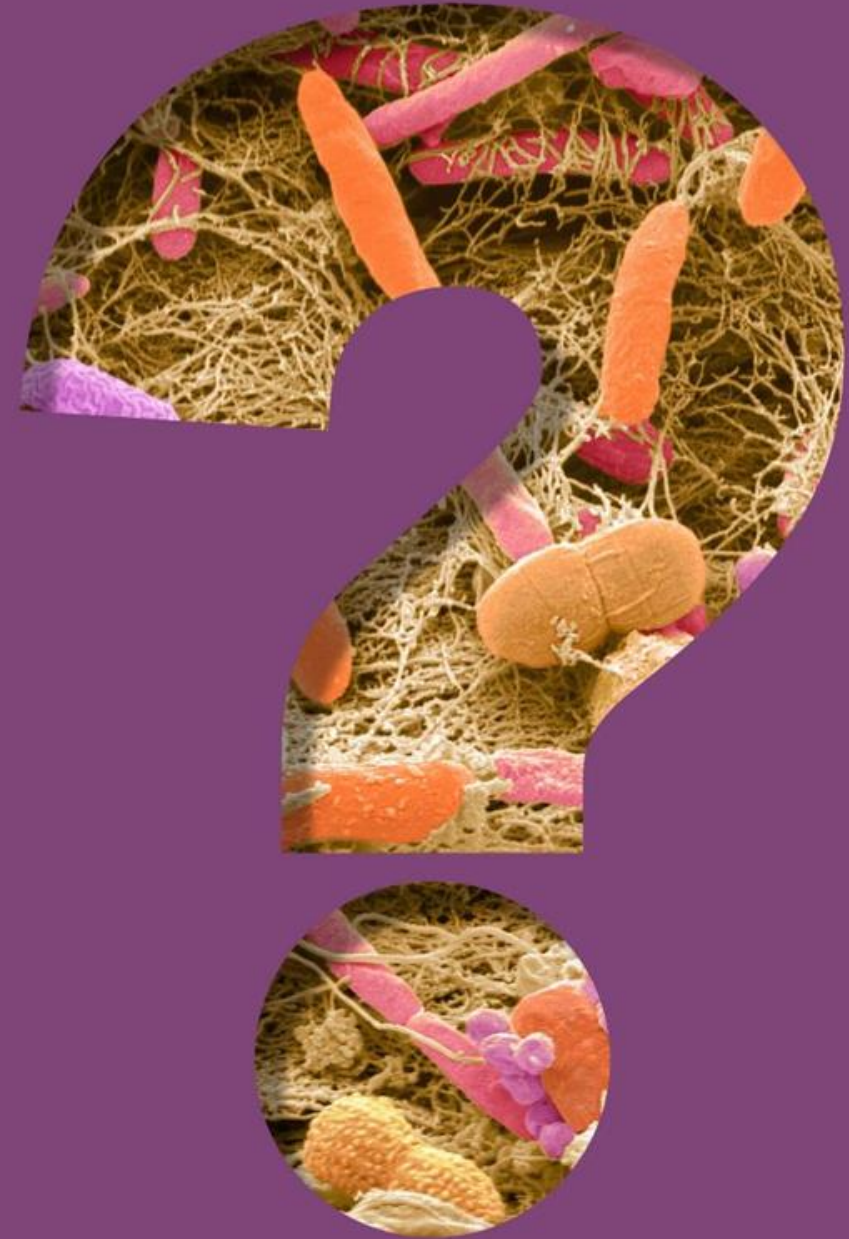


Word Clouds and Discussion

Wordclouds

Reservoir Word Clouds

What is one important thing about body reservoirs that a new colleague should know to prevent the spread of germs? Why?



Skin Word Cloud



Key Takeaways about the Skin Reservoir

- ✓ Skin, especially hands, interacts with the environment daily.
- ✓ Pathways:
 - Touch
 - Breaking down or bypassing the body's defenses

Skin

Skin

Key facts about skin	<ul style="list-style-type: none">■ Skin, especially the hands, interacts with the environment daily.■ Many germs grow on the skin and help keep it healthy, but some of those germs can be harmful to vulnerable patients.
Special considerations about skin	<ul style="list-style-type: none">■ Skin is one of the body's best lines of defense against infection.■ Broken skin, including dry, itchy skin, is likely to have more germs – particularly germs that can cause harm.■ Germs can spread more easily from broken skin.
Common germs on skin	<ul style="list-style-type: none">■ <i>Staphylococcus aureus</i> (including MRSA)■ <i>Streptococcus</i>■ <i>Candida</i>, a type of yeast (including <i>C. auris</i>)
Pathways to infection	<ul style="list-style-type: none">■ Touch■ Breaking down or bypassing the body's defenses, like breaking the skin to insert an IV
Common healthcare actions involving the skin	<ul style="list-style-type: none">■ Anything involving touch■ Needlesticks■ Surgery
Infection control actions	<ul style="list-style-type: none">■ Cleaning hands and keeping skin healthy■ Using personal protective equipment (PPE), like gloves and gowns■ Cleaning and disinfecting■ Performing safe injections and handling sharps safely

GI System Word Cloud



Key Takeaways about the GI System Reservoir

- ✓ The “gut” usually refers to most of the intestines, rectum, and anus.
- ✓ Gut germs travel easily in stool.
- ✓ Pathways:
 - Touch
 - Breaking down or bypassing the body's defenses

GI System

GI System

Key facts about the GI system	<ul style="list-style-type: none"> ■ The gastrointestinal (GI), or digestive system, has two parts: an upper GI tract and a lower GI tract. ■ The lower GI tract, or “the gut,” usually refers to most of the intestines (small and large bowels), rectum, and anus. Most GI germs that cause infection control problems come from the gut. ■ The upper GI tract, which includes the mouth, esophagus, stomach, and first part of the small intestine (the duodenum), has different types of bacteria and fungi. We usually think about the upper GI tract separately from the gut.
Special considerations about the gut	<ul style="list-style-type: none"> ■ The intestines are filled with bacteria and some yeasts that are important parts of a healthy immune system. Most gut germs usually don’t cause problems in healthy people. ■ Germs that live in the intestines are also found in stool, or poop. Gut germs travel easily in stool from the gut to other places. ■ Gut germs are commonly found in places outside the gut, including in the environment – like on surfaces in bathrooms. ■ When gut germs are spread to other places or people, they can make people sick.
Common germs in the gut	<ul style="list-style-type: none"> ■ <i>Escherichia coli</i> (<i>E. coli</i>) ■ <i>Klebsiella</i> ■ <i>Candida</i>, a type of yeast ■ <i>Clostridioides difficile</i> (<i>C. difficile</i>, or <i>C. diff</i>)
Pathways to infection	<ul style="list-style-type: none"> ■ Touch, especially skin and hands ■ Splashes or sprays from toilets ■ Breaking down or bypassing the body’s defenses, like surgery or colonoscopy
Common healthcare actions involving the gut	<ul style="list-style-type: none"> ■ Toileting and changing diapers ■ Bathing ■ Handling bedding and towels
Infection control actions	<ul style="list-style-type: none"> ■ Cleaning hands ■ Using personal protective equipment (PPE), like gloves and gowns ■ Cleaning and disinfecting ■ Handling linens and textiles carefully ■ Managing trash and waste appropriately

Respiratory System Word Cloud



Key Takeaways about the Respiratory System Reservoir

- ✓ Upper airway: Nose, mouth, throat, windpipe
- ✓ Lower airway: Lungs
- ✓ Pathways:
 - Breathing in
 - Splashes and sprays
 - Touch

Respiratory System

Respiratory System

Key facts about the respiratory system	<ul style="list-style-type: none"> ■ The respiratory system consists of the upper airway – including the nose, throat, and windpipe – and the lower airway, which includes the lungs. ■ Many germs live in the upper airway. Most of these germs keep those parts of the body healthy. ■ The defenses of the nose, mouth, and throat keep a lot of germs from getting to the lungs.
Special considerations about the respiratory system	<ul style="list-style-type: none"> ■ Sometimes germs are found in the respiratory system because someone has an infection. ■ When germs get past the defenses of the nose, mouth, and throat and reach the lungs, they can cause an infection. ■ Coughing is one of the lungs' defenses for getting germs out, and it is also a way for those germs to spread to others.
Common germs in the respiratory system	<ul style="list-style-type: none"> ■ <i>Pseudomonas</i> ■ <i>Staphylococcus aureus</i>, including MRSA ■ Respiratory viruses, when someone is infected
Pathways to infection	<ul style="list-style-type: none"> ■ Breathing in ■ Splashes and sprays ■ Touch
Common healthcare actions involving the respiratory system	<ul style="list-style-type: none"> ■ Performing oral care (e.g., toothbrushing) ■ Using a CPAP for sleep apnea ■ Intubating a patient ■ Giving nebulized medication
Infection control actions	<ul style="list-style-type: none"> ■ Coughing into your elbow, cleaning hands, properly disposing of tissues: also known as respiratory hygiene and cough etiquette ■ Wearing a mask that covers the nose and mouth for source control, to prevent the spread of respiratory droplets ■ Ensuring good ventilation ■ Maintaining physical separation in common areas and placing patients with respiratory illnesses in single rooms, when possible ■ Using personal protective equipment (PPE), like respirators and gowns ■ Cleaning and disinfecting

Blood Word Cloud



Key Takeaways about the Blood Reservoir

- ✓ Blood is not supposed to have germs in it.
- ✓ Some viruses cause infections that release virus into the blood. If a person is infected and untreated, blood can then spread the virus to other people.
- ✓ Pathways:
 - Breaking down or bypassing the body's defenses
 - Splashes and sprays
 - Touch

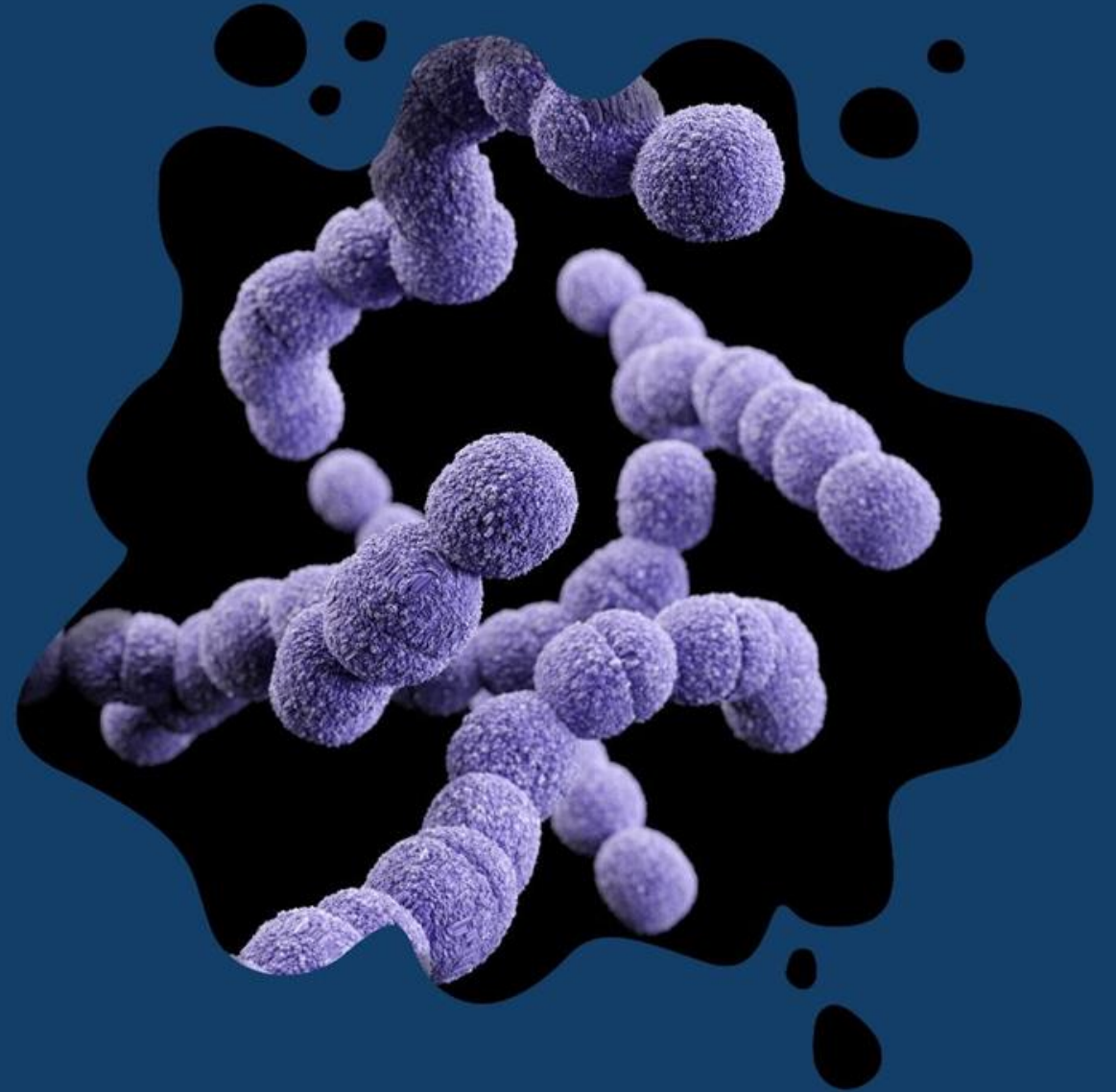
Blood

Blood

Key facts about blood	<ul style="list-style-type: none"> ■ Blood is sterile and is not supposed to have germs in it. ■ Some viruses can cause infections that last for a long time and release virus into an infected person's blood. That blood can then spread the virus to other people.
Special considerations about blood	<ul style="list-style-type: none"> ■ Blood is nutritious food for bacteria. ■ If blood gets on germs in the environment, like on linens or a device, those germs are likely to grow and multiply.
Common germs in the blood	<ul style="list-style-type: none"> ■ If someone is infected and untreated: <ul style="list-style-type: none"> ▶ HIV ▶ Hepatitis B ▶ Hepatitis C ■ If blood is outside of the body: <ul style="list-style-type: none"> ▶ Bacteria
Pathways to infection	<ul style="list-style-type: none"> ■ Breaking down or bypassing the body's defenses ■ Splashes and sprays ■ Touch
Common healthcare actions involving blood	<ul style="list-style-type: none"> ■ Inserting an IV ■ Giving an injection ■ Performing surgeries and procedures ■ Changing soiled laundry
Infection control actions	<ul style="list-style-type: none"> ■ Performing safe injections and handling sharps safely ■ Using personal protective equipment (PPE), like gloves, gowns, and eye protection ■ Cleaning hands ■ Handling linens and textiles carefully ■ Cleaning and disinfecting

Bringing It Together

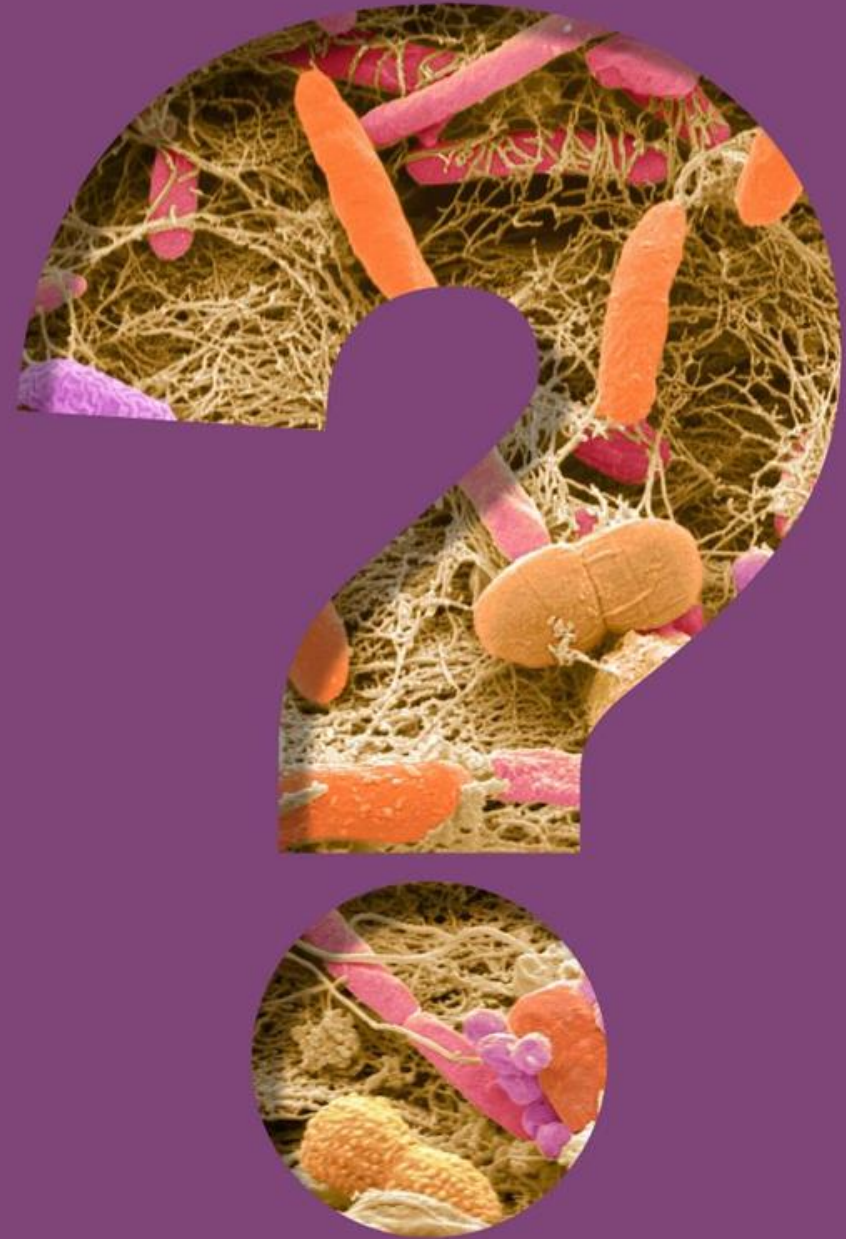
Reflection



Key Takeaways

- ✓ "Reservoirs" are the places on and in our bodies and in the environment where germs live. Germs frequently spread between and among these reservoirs.
- ✓ Four reservoirs in the human body that are important for infection control are the skin; the gastrointestinal (GI) system or "gut"; the respiratory system; and blood.
- ✓ Understanding where germs live helps us recognize where there is risk for them to be spread, and why infection control actions work to stop them from spreading and making people sick.

Questions



Project Firstline Training

Upcoming webinars (all sessions 9 – 9:30 a.m.)

- April 13, 2023: Virus Variants
- June 15, 2023: Gowns and Gloves
- July 13, 2023: Body Reservoirs
- September 14, 2023: Healthcare Reservoirs

Recordings (hanys.org/project_firstline)

- The concept of infection control training
- The basic science of viruses
- How respiratory droplets spread COVID-19
- How viruses spread from surfaces to people
- How COVID-19 spreads: A review
- Environmental cleaning and disinfection
- Source control in healthcare to prevent infections
- Hand hygiene
- What does it mean to recognize risk
- How germs make people sick
- Recognize and limit infection control risks

How to Get Involved and Feedback



Project Firstline on CDC.gov:
<https://www.cdc.gov/infectioncontrol/projectfirstline/index.html>



CDC's Project Firstline on Facebook:
<https://www.facebook.com/CDCProjectFirstline>



CDC's Project Firstline on Twitter:
https://twitter.com/CDC_Firstline



Project Firstline *Inside Infection Control* on YouTube:
<https://www.youtube.com/playlist?list=PLvrp9iOILTQZQGtDnSDGViKDdRtlc13VX>



To sign up for Project Firstline e-mails, click here:
https://tools.cdc.gov/campaignproxyservice/subscriptions.aspx?topic_id=USCDC_2104

- Project Firstline feedback form:
<https://www.cdc.gov/infectioncontrol/pdf/projectfirstline/TTK-ParticipantFeedback-508.pdf>